

THERAPEUTIC COMPOSITIONSABSTRACT

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Compositions comprising ketone bodies and/or their metabolic precursors are provided that are suitable for administration to humans and animals and which have the properties of, *inter alia*, (i) increasing cardiac efficiency, particularly efficiency in use of glucose, (ii) for providing energy source, particularly in diabetes and insulin resistant states  
10 and (iii) treating disorders caused by damage to brain cells, particularly by retarding or preventing brain damage in memory associated brain areas such as found in Alzheimer's and similar conditions.

These compositions may be taken as nutritional aids, for example for athletes, or for the treatment of medical conditions, particularly those associated with poor cardiac  
15 efficiency, insulin resistance and neuronal damage. The invention further provides methods of treatment and novel esters and polymers for inclusion in the compositions of the invention.